

CHAPTER ELEVEN

FRONT DRIVE MECHANISM (FOUR-WHEEL DRIVE)

This chapter describes repair and replacement procedures for the front drive mechanism used on four-wheel drive FE and FM models. This includes the front drive axles, front driveshaft and front differential gearcase.

Refer to **Table 1** for front drive specifications. **Table 2** lists torque specifications for the front drive mechanism assembly. **Tables 1-2** are located at the end of this chapter.

FRONT DRIVE AXLES

Removal/Installation

1. Detach the lower end of the shock absorber for the side being serviced (Chapter Ten). Raise the shock absorber out of the way.

NOTE

It is not necessary to remove the brake panel when performing Step 2.

2. Separate the lower ball joint from the steering knuckle (Chapter Ten) for the side being serviced.

3. Raise the steering knuckle assembly and remove the outer axle end from the steering knuckle (**Figure 1**). Support the steering knuckle assembly so it is out of the way.

CAUTION

When removing the front axle, be careful not to damage the rubber boots.

CAUTION

To avoid damage to the front differential oil seal and splines, pull the inboard joint straight out of the front differential.

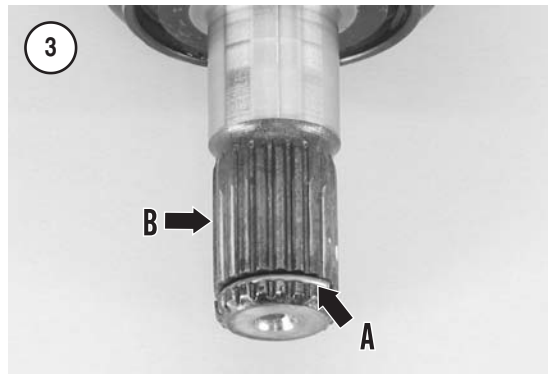
4. Hold the inboard joint and pull the driveshaft (**Figure 2**) out of the differential. It may be necessary to use a screwdriver to pry the axle loose.

5. Perform the inspection procedures described in this section.

6. Install the front axle by reversing the preceding removal steps while noting the following:



- a. Install a new stopper ring (A, **Figure 3**) in the groove in the inboard joint. Make sure it is properly seated in the axle groove.
- b. Lubricate the front axle seal (**Figure 4**) and inner splines (B, **Figure 3**) with molybdenum disulfide grease.
- c. Carefully guide the front axle into the gearcase (**Figure 1**). Push it in all the way until it bottoms. Pull the inboard joint a little to make sure the stopper ring locks into the front differential side gear groove.
- d. Install the steering knuckle and shock absorber (Chapter Ten).

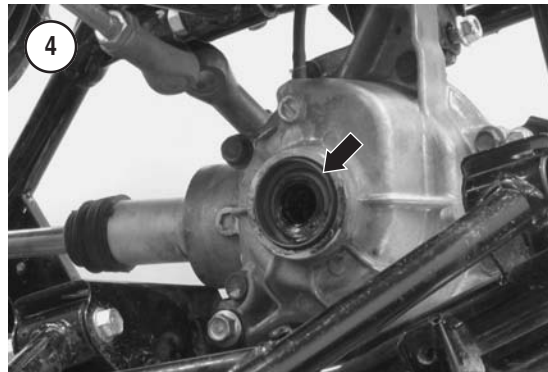


Inspection

NOTE

The axle boots encounter much abuse. Damaged boots allow dirt, mud and moisture to enter the boot, contaminate the grease and damage the bearing.

1. Inspect the rubber boots (A, **Figure 5**) for wear, cuts or damage. Replace them if necessary as described in *Disassembly* in this section.
2. Move each end of the front axle (B, **Figure 5**) in a circular motion and check the constant velocity joints for excessive wear or play.

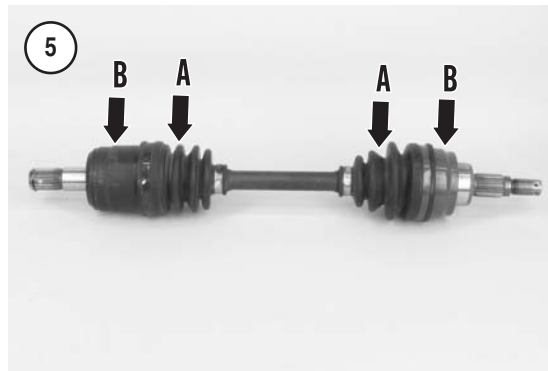


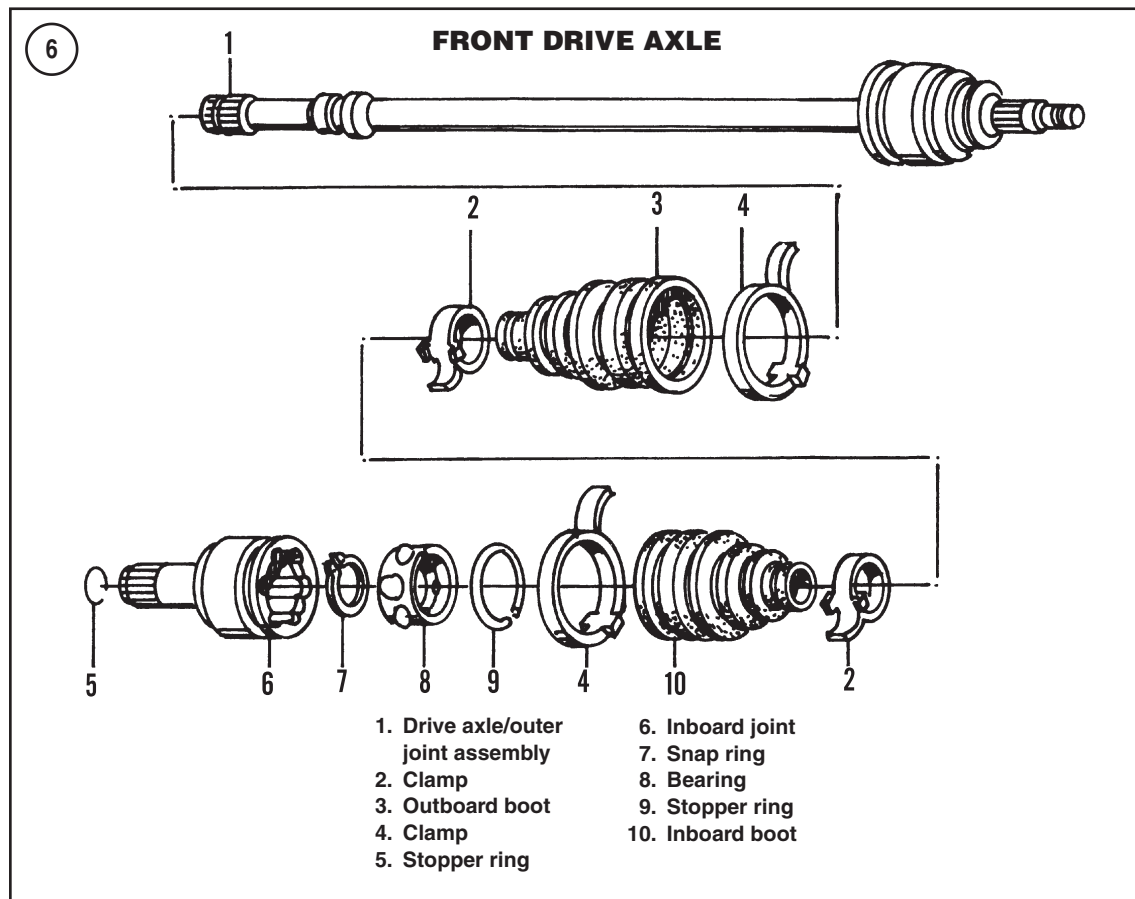
Disassembly

Refer to **Figure 6**.

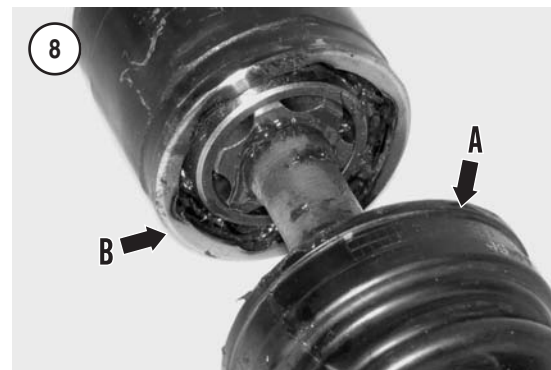
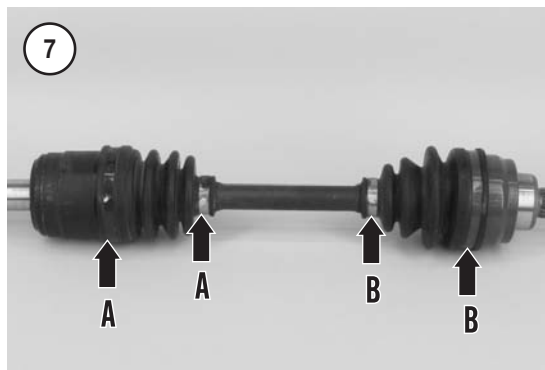
NOTE

The outboard joint cannot be disassembled or repaired. If it is damaged





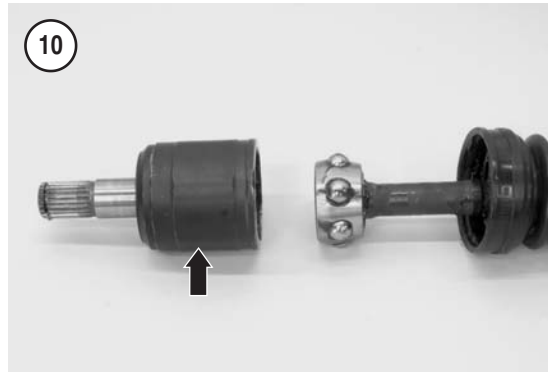
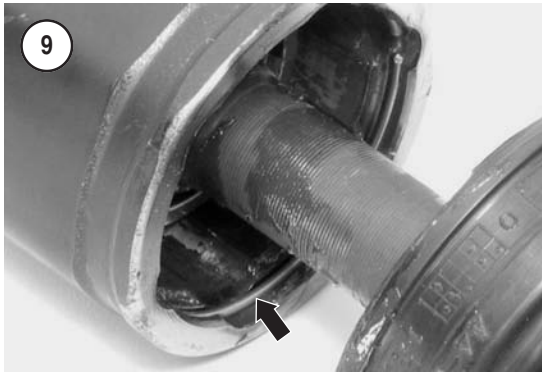
11



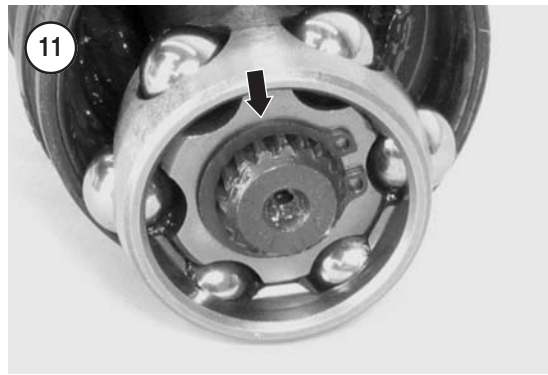
or faulty, the drive axle assembly must be replaced.

1. Open the clamps (A, **Figure 7**) on the inboard joint, then remove the clamps. Discard the clamps because they cannot be reused.
2. Carefully slide the boot (A, **Figure 8**) onto the front axle and off the inboard joint.

3. Wipe all of the grease from the inboard joint cavity (B, **Figure 8**).
4. Remove the stopper ring (**Figure 9**) from the inboard joint.
5. Remove the inboard joint (**Figure 10**).
6. Remove the snap ring (**Figure 11**) and slide off the bearing assembly (**Figure 12**). Be careful not to drop any of the steel balls from the bearing cage.



7. Slide the inboard boot off the front axle and discard the clamp. It cannot be reused.
8. If the outboard boot requires replacement, perform the following:
 - a. Open the clamps (B, **Figure 7**) on the outboard joint, then remove and discard the clamps.
 - b. Slide the outboard boot off the drive axle and discard the clamp.
9. Inspect the drive axle as described in this procedure.



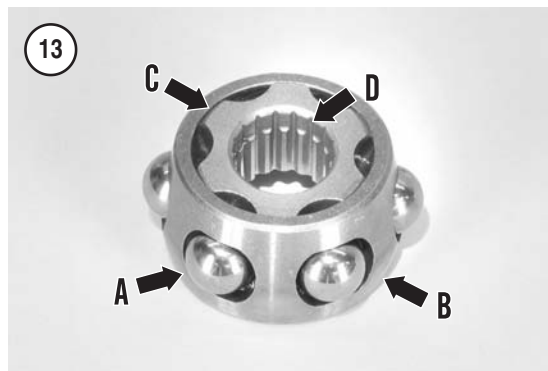
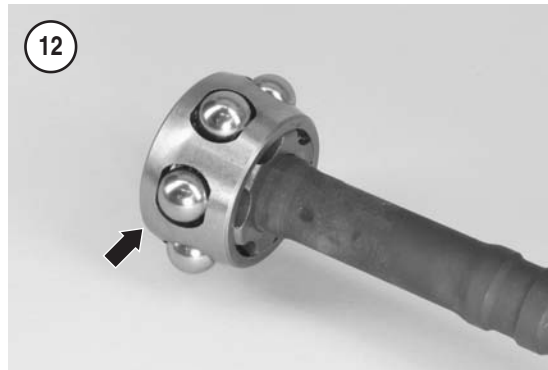
Inspection

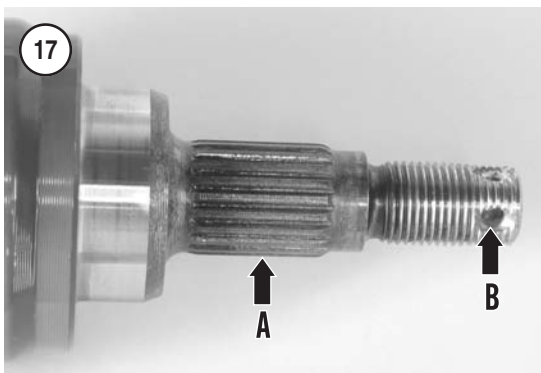
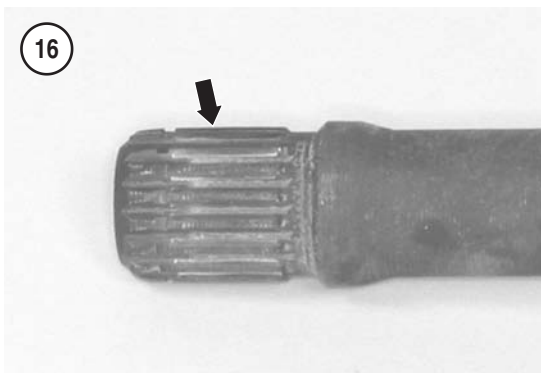
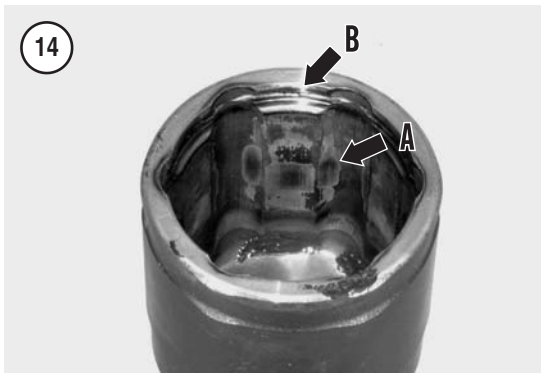
Refer to **Figure 6**.

CAUTION

Before cleaning the rubber boots, make sure the cleaning solvent will not damage rubber products.

1. Clean and dry the bearing assembly.
2. Inspect the steel balls (A, **Figure 13**), bearing cage (B) and bearing race (C) for excessive wear or damage.
3. Check the bearing race inner splines (D, **Figure 13**) for wear or damage.
4. If necessary, disassemble the bearing assembly for further inspection. Carefully remove the steel balls from the bearing cage then remove the bearing race from the bearing cage.
5. If any of the bearing components are damaged, replace the entire assembly. Individual replacement parts are not available.
6. Clean and dry the inboard joint.
7. Inspect the inboard joint ball guides (A, **Figure 14**) for excessive wear or damage.





8. Inspect the inboard joint stopper ring groove (B, **Figure 14**) for wear or damage.

9. Check the stopper ring groove (A, **Figure 3**) in the inboard joint shaft for cracks or other damage.

10. Inspect the axle and inboard joint splines (B, **Figure 3**) for excessive wear or damage.

11. Inspect the inboard joint (**Figure 15**) for cracks or damage.

12. Move the outboard joint axle through its range of motion and check for excessive play or noise.

13. Inspect the front drive axle for bending, wear or damage.

14. Inspect the inner end splines (**Figure 16**), the outer end splines (A, **Figure 17**) and the front hub cotter pin hole (B) for wear or damage.

15. Inspect the rubber boots for cracks, age deterioration or other damage.

16. Replace the front drive axle assembly if any of the components are excessively worn or damaged. Individual replacement parts for the front drive axle, other than the rubber boots and clamps, are not available.

11

Assembly

Refer to **Figure 6**.

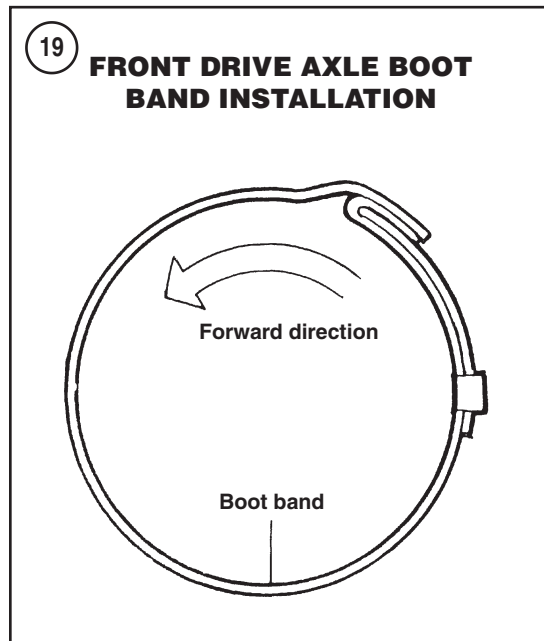
1. The rubber boots are not identical and must be installed on the correct joint. Original equipment replacement boots are marked with an identifying number (**Figure 18**) as follows:

- a. Inboard joint—68.
- b. Outboard joint—68L.

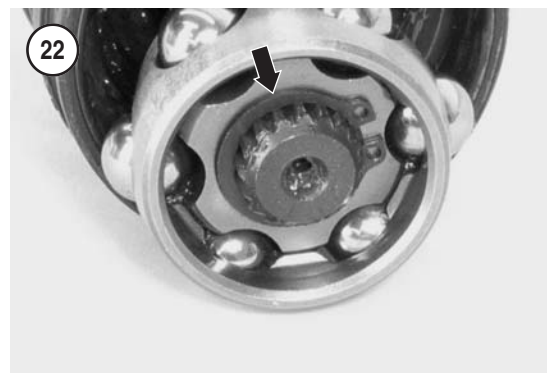
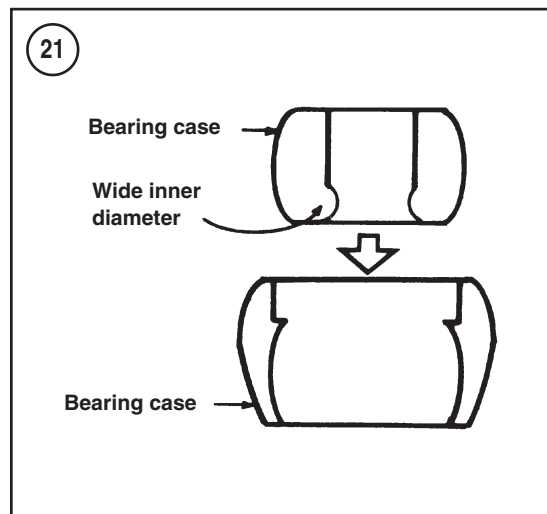
2. If the outboard boot was removed, install a new boot on the front axle at this time.

NOTE

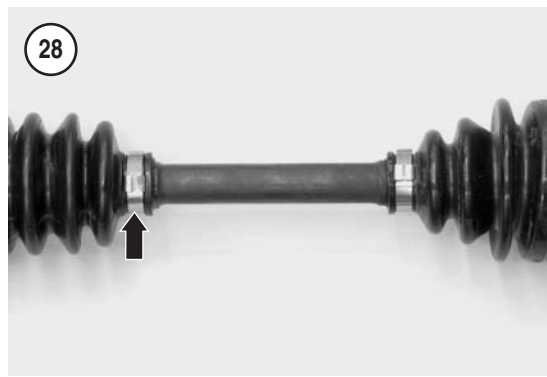
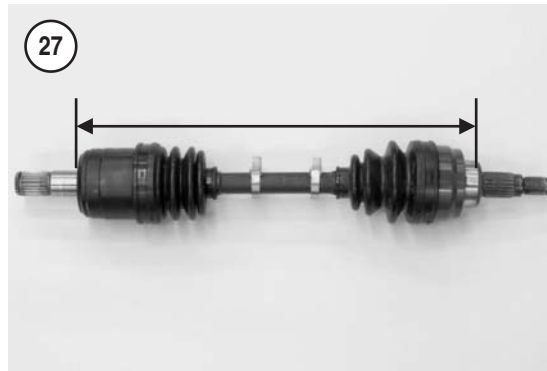
*Install the new boot clamps with their tabs facing in the direction shown in **Figure 19**.*



3. Install two new small boot clamps onto the front axle.
4. Install the inboard boot and move the small boot clamp onto the boot (**Figure 20**). Do not lock the clamp at this time.
5. If the bearing assembly was disassembled, assemble the bearing as follows:
 - a. Position the bearing race with the wide inner diameter going on first and install the race (**Figure 21**) into the bearing case. Align the steel ball receptacles in both parts.
 - b. Install the steel balls into their receptacles in the bearing case.
 - c. Pack the bearing assembly with grease included in the boot replacement kit. Grease will help hold the steel balls in place.
6. Position the bearing assembly with the small end of the bearing going on first and install the bearing onto the drive axle (**Figure 12**).
7. Push the bearing assembly on until it stops, then install a new snap ring (**Figure 22**) into the groove in the shaft. Make sure the snap ring seats in the groove completely.
8. Apply a liberal amount of grease to the bearing assembly (**Figure 23**). Work the grease between the balls, race and case. Check for voids and fill them with grease.
9. Lubricate the inboard joint inner surface with grease.



10. Install the inboard joint onto the bearing assembly (**Figure 24**) and install the stopper ring (**Figure 25**). Make sure the stopper ring seats in the groove completely.
11. After the stopper ring is in place, fill the inboard joint cavity behind the bearing assembly with grease (B, **Figure 8**).



12. Pack each boot with the following amounts of molybdenum disulfide grease:

- a. Inboard boot—40-60 g (1.4-2.1 oz.).
- b. Outboard boot—30-50 g (1.1-1.8 oz.).

13. Move the inboard boot onto the inboard joint (**Figure 26**).

14. Move the inboard joint on the drive axle until the distance between the ends of the inboard and outboard joints are as specified in **Table 1** (**Figure 27**).

15. Move the small boot clamp onto each boot (**Figure 28**). Bend down the tab on the boot clamp and secure the tab with the locking clips and tap them with a plastic hammer. Make sure the tab is locked in place (**Figure 29**). Repeat for the opposite boot.

NOTE

*Install the new boot clamps with their tabs facing in the direction shown in **Figure 19**.*

16. Install the large boot clamps onto each boot. Make sure the boots are not twisted on the axle.

CAUTION

Make sure the inboard joint does not move while installing the boot

clamps. The dimension achieved in Step 14 must be maintained at all times. This dimension is critical to avoid undue stress on the rubber boots during vehicle operation.

17. Refer to **Figure 30** and secure all large boot clamps. Bend down the tab (**Figure 31**) on the boot clamp and secure the tab with the locking clips and tap them with a plastic hammer. Make sure they are locked in place (**Figure 29**).

18. Install a new stopper ring (A, **Figure 3**) if it was removed. Make sure the stopper ring is seated correctly in the drive axle groove.

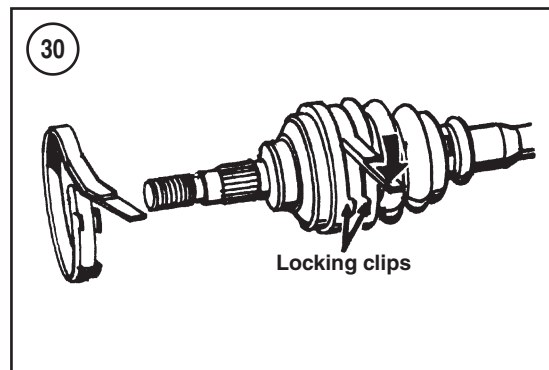
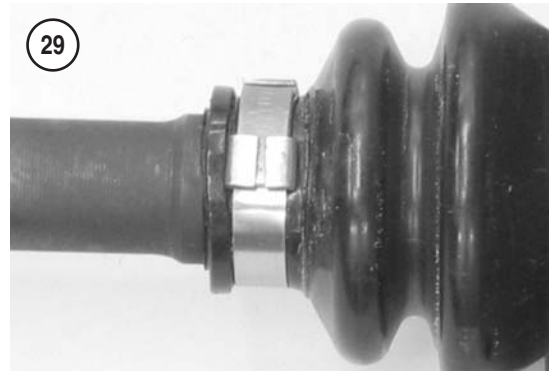
19. Apply molybdenum disulfide grease to the drive axle splines.

DRIVESHAFT

The driveshaft **Figure 32** can be removed without removing the front differential or front drive axles.

Removal

1. Support the ATV with the front wheels off the ground.
2. Remove the center mud guard and inner front fender panel on the left side of the vehicle as described in Chapter Fifteen.
3. Remove the lower front differential mounting bolt (**Figure 33**).
4. Remove the upper front differential mounting bolt (A, **Figure 34**) and spacer (B).
5. Remove the front differential front mounting bracket bolts (**Figure 35**).
6. Push the front differential forward, then push the front driveshaft forward so it disconnects from the engine output shaft (**Figure 36**).
7. Remove the front boot band (A, **Figure 37**).
8. Push the boot (B, **Figure 37**) off the differential pinion joint while pulling the driveshaft rearward and removing it.
9. Remove the driveshaft joint and spring from the driveshaft.
10. Inspect the driveshaft as described in this section.



Inspection

1. Inspect the driveshaft for bending or other damage.
2. Examine the splines in each end for damage.
3. Examine the seals for excessive wear or damage. Install a new seal using the following procedure:

CAUTION

The seal is a tight fit when passing over the shaft splines. Lubricate the

Copyright of Honda TRX350 RANCHER, 2000-2006 is the property of Penton Media, Inc. ("Clymer") and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.